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QUALITY OF CARE AND OUTCOMES ASSESSMENT

IMPROVEMENT BEYOND THE FRAMINGHAM RISK SCORE FOR PREDICTION OF MORTALITY BY THE ADDITION OF THE INTERMOUNTAIN RISK SCORE

ACC Poster Contributions
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Background: The Framingham risk score (FRS) is the standard risk stratification tool for coronary heart disease. The Intermountain risk score (IMRS), a new metric created in a general medical population and validated in NHANESIII, predicts mortality, myocardial infarction (MI), and coronary artery disease (CAD). This study tested whether adding IMRS to FRS improves risk stratification.

Methods: FRS and IMRS (using the complete blood count, basic metabolic profile, age, and sex) were calculated among 3,091 males and 2,022 females undergoing angiography. An IMRS-modified FRS was computed using the IMRS relative risk of death, MI, or CAD to increase or decrease FRS point totals with the median IMRS value used as the referent. FRS and IMRS-modified FRS point totals were then used to stratify patients into 10-year risk categories of 20%.

Results: ROC c-statistics (with 95% CI) and net reclassification indices (NRI) for 30-day, 1-year, and 5-year death (Table) showed marked improvement in males when IMRS was added to the FRS and moderate improvement in females. C-statistics for MI were low for FRS (<0.53 in males, <0.59 in females) and only mildly improved for IMRS-modified FRS (<0.56 in males, <0.63 in females), while for CAD they were not improved (FRS vs. modified FRS: 0.64 vs. 0.62 in males, 0.71 vs. 0.70 in females).

Conclusions: Adding the IMRS to the FRS improved risk prediction for mortality and MI, while significantly reclassifying patients into more appropriate risk strata, but did not improve CAD prediction.

Prediction of Mortality

	30-day Death	1-year Death	5-year Death
Females			
FRS c-statistics	0.68 (0.61, 0.75)	0.67 (0.62, 0.72)	0.67 (0.63, 0.71)
Modified FRS c-statistics	0.72 (0.64, 0.79)	0.69 (0.64, 0.75)	0.71 (0.66, 0.75)
NRI	0.30 (p=0.021)	0.23 (p=0.005)	0.29 (p<0.0001)
Males			
FRS c-statistics	0.65 (0.59, 0.72)	0.66 (0.61, 0.70)	0.64 (0.61, 0.67)
Modified FRS c-statistics	0.75 (0.69, 0.80)	0.73 (0.69, 0.77)	0.67 (0.64, 0.70)
NRI	0.57 (p<0.0001)	0.46 (p<0.0001)	0.25 (p<0.0001)